

# Notice of Allowability

Application No.

10/006,559

Examiner

Qutub Ghulamali

Applicant(s)

DAVIES ET AL.

Art Unit

2637

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/25/2005.
2. ☒ The allowed claim(s) is/are 1-5, 7-12, 14-16, 18, 19, 21, 31 renumbered as claims 1-5, 6-11, 12-14, 15, 17, 18 and 16 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**JEAN B. CORRIELLUS**  
PRIMARY EXAMINER  
11-11-05

## **DETAILED ACTION**

### ***Acknowledgment***

1. This Office Action is responsive to the Amendment filed on 10/25/2005.
2. The applicant amended claims 1, 8 and 15, and cancelled claims 6, 13, 17 and 22-30.

### ***Response to Amendment***

3. Applicant's amendments filed 10/25/2005 have been fully considered but does not place the application in condition for allowance. However, upon further consideration by the Office and interview with the applicant's representative, an examiner's amendment was considered necessary in order to further advance prosecution on the case.

## **EXAMINER'S AMENDMENT**

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Mark L. Becker on 11/09/2005.

5. The application has been amended as follows:

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IN THE CLAIMS:

Claim 15 has been amended as follows:

--15. (currently amended) A method for generating a recovered clock signal, comprising:

generating a plurality of phase select signals in response to a FWD (forward) signal and a BWD (backward) signal from a digital filter;

wherein said digital filter asserts said FWD signal if the phase of a SDIN (serial digital input) signal leads the phase of said recovered clock signal;

and wherein said digital filter asserts said BWD signal if the phase of said SDIN (serial digital input) signal lags the phase of said recovered clock signal;

and wherein said phase select signals are arranged in a predetermined order with a selected one of said phase select signals being asserted as a currently asserted phase select signal with the rest of said phase select signals not being asserted;

~~and wherein a first one of said phase select signals is asserted as said currently asserted phase select signal in response to a RST (reset) signal;~~

and wherein a prior one from said currently asserted phase select signal in said order of said phase select signals is asserted as a newly asserted phase select signal when said BWD signal is asserted;

and wherein a subsequent one from said currently asserted phase select signal in said order of said phase select signals is asserted as said newly asserted phase select signal when said FWD signal is asserted;

generating said recovered clock signal having a phase that is phase interpolated between a first phase of a first output clock signal and a second phase of a second output clock signal; and

selecting each of said first and second output clock signals as one of a predetermined number of given clock signals arranged in a predetermined phase order, depending on whether said phase select signals indicate that said FWD signal is asserted or that said BWD signal is asserted such that the phase of said recovered clock signal increases when said FWD signal is asserted and decreases when said

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BWD signal is asserted and remains substantially constant when said FWD signal and said BWD signal are not asserted; and

generating a complementary recovered clock signal that has a 180° phase shift from said recovered clock signal and that has a phase that is phase interpolated between the phases of third and fourth output clock signals, wherein said third output clock signal has a 180° phase shift from said first output clock signal, and wherein said fourth output clock signal has a 180° phase shift from said second output clock signal.--

Claim 31 has been added as follows:

--31. (new) The method of claim 16, wherein a first one of said phase select signals is asserted as said currently asserted phase select signal in response to a RST (reset) signal.--

*Allowable Subject Matter*

6. Claims 1-5, 7-12, 14-16, 18-19, 21 and 31 allowed.

7. The following is an examiner's statement of reasons for allowance:

With reference to claims 1, 8 and 15, the prior art made of record in combination with other claimed limitations, neither teach nor explicitly show, a phase selection unit for generating a recovered clock signal, the phase selection unit comprising: a second multiplexer for-inputting said-predetermined number of given clock signals and for outputting a third output clock signal that has a 180 degrees phase shift from said first output clock signal and for outputting a fourth output clock signal that has a 180 degree phase shift from said second output clock signal; and a second phase interpolator that receives said third and fourth output clock signals to generate a complementary recovered clock signal that has a 180 degree phase shift from said recovered clock signal and that has a phase that is phase interpolated between the phases of said third and fourth output clock signals.

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Such limitations, as recited in independent claims 1, 8 and 15, is neither anticipated nor rendered obvious by the prior art made of record.

Claims 2-5, 7, 9-12, 14, 16, 18-19, 21 and 31 are allowed by virtue of their dependency to claims highlighted above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### *Contact Information*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.  
November 10, 2005.

  
JEAN B. CORRIELUS  
PRIMARY EXAMINER

11-11-05